

Abstract

An apparatus is disclosed for the micro-organism surface sterilization of foods using, a “germicidal” such as light waves (e.g., ultraviolet), and in some cases in combination with (or replaced by) one or more of sound waves and ozone. The surface sterilizer apparatus may include a plurality of germicidal (e.g., ultraviolet) emitters for surface sterilization of foods that are, e.g., rotated in a drum or rotated via a screw auger. Assemblies of emitters for the germicidal may be constructed to be watertight (i.e., withstand a high pressure, heated water spray), and movable relative to the drum or screw conveyor for easy cleaning and maintenance. The apparatus may also include a controller (e.g., programmable logic controller) for controlling the sterilization process so that the apparatus does not endanger personnel nearby, and so that the food is properly sterilized. The controller may vary the amount of germicidal used, the rate that food traverses the apparatus, the inclination of the apparatus, and terminate sterilization processing when an unsafe condition is detected. The apparatus may be used in-line with other food processing equipment for the real-time sterilization of food. The controller may also communicate with food processing components upstream of the apparatus for controlling the flow of food to the surface sterilizer

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